

1 Listing of the Claims:

2 This listing of claims will replace all prior versions, and
3 listings, of claims in the application using (Original) (Currently
4 Amended) (New) (Canceled) (Previously Amended) nomenclature, as
5 recited in the below listing of claims.

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7 1. (Currently Amended) A method of broadcasting from a proximal
8 cache at a proximal internet protocol address (IPA) a routing ~~item~~
9 information for indicating an originator storing web content data
10 associated with a uniform resource locator (URL) of a web server at
11 an originating IPA permanently storing the web content data, the
12 method comprising the steps of:

13 ~~originating URL identifier~~ generating at the proximal IPA an
14 originating URL identifier for indicating the URL,

15 ~~sourcing IPA~~ generating at the proximal IPA a sourcing IPA for
16 indicating the originator,

17 ~~destination IPA~~ generating at the proximal IPA a destination
18 IPA for indicating a destination cache,

19 associating at the proximal IPA the sourcing IPA and the
20 originating URL as the routing ~~item~~ information, and

21 transmitting the routing ~~item~~ information from the proximal
22 cache at the proximal IPA to the destination cache at a destination
23 IPA.

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1 2. (Currently Amended) The method of claim 1 further comprising the
2 steps of:

3 distance generating a distance metrics for indicating a web
4 hop distance of a number of the plurality of cooperative web caches
5 through which the URL web content data would be communicated from a
6 source at the sourcing IPA through the plurality of cooperative web
7 caches to the proximal web cache.

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10 3. (Previously Presented) The method of claim 2 wherein,
11 the originating URL identifier is a proximal URL identifier,
12 the sourcing IPA is the proximal IPA, the proximal cache stores
13 locally the web content data, and

14 the distance metric is one indicating that one web hop is
15 between the destination cache to the proximal cache.

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18 4. (Previously Presented) The method of claim 2 wherein,

19 the originating URL identifier is a source URL identifier,
20 the sourcing IPA indicates an IPA location of the source
21 distally storing the web content data,

22 the distance metric is greater than one indicating a number
23 greater than one of the number of web hops between the destination
24 cache through the proximal cache to the source distally storing the
25 web content data.

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27 5. (Canceled)

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1 6. (Previously Presented) The method of claim 4 wherein,
2 the source is the web server distally and permanently storing
3 the web content data, and
4 the sourcing IPA is a web server IPA indicating the IPA
5 location of the web server.

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7 7. (Original) The method of claim 1 wherein,
8 the originating URL identifier is selected from the group
9 consisting of,

10 an exact URL identifier being an exact URL comprising a
11 plurality of URL components,

12 a wildcard URL identifier being a wildcard URL comprising a
13 plurality of URL components a last URL component of which being a
14 wildcard component, and

15 a coded URL identifier being a coded URL comprising a series
16 of hashing codes of a decomposed URL being a decomposition of the
17 URL selected from the group consisting of either an exact URL or a
18 wildcard URL each of which comprising a series of URL components,
19 the series of hashing codes being a sequence of hashing codes of
20 respective URL segments of a respective series of increasingly
21 concatenated URL components of the series of URL components of the
22 URL.

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1 8. (Currently Amended) A method of broadcasting from a proximal
2 cache at a proximal internet protocol address (IPA) a routing item
3 information for indicating a distal web cache storing web content
4 data associated with a uniform resource locator (URL) of a web
5 server permanently storing the web content data, the proximal web
6 cache is a first one of a plurality of cooperative web caches, the
7 distal web caches is a last one of the plurality of cooperative web
8 caches, the method comprising the steps of:

9 ~~URL identifier~~ generating at the proximal IPA a URL identifier
10 for indicating the web content data of the URL stored in the distal
11 web cache,

12 ~~proximal IPA~~ generating at the proximal IPA the proximal IPA
13 for indicating the location of the proximal cache,

14 ~~destination IPA~~ generating at the proximal IPA a destination
15 IPA for indicating a destination cache,

16 ~~distance~~ generating at the proximal IPA a distance metric for
17 indicating a web hop distance of any number of the plurality of
18 cooperative web caches through which the web content data would be
19 communicated from the distal web cache to the destination web
20 cache,

21 associating at the proximal IPA the proximal IPA and the URL
22 identifier and the distance metric as the routing item information,
23 and

24 transmitting the routing item information from the proximal
25 cache at the proximal IPA to the destination cache at a destination
26 IPA.

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1 9. (Original) The method of claim 8 wherein,

2 the distance metric is greater than one indicating a number
3 greater than one of the number of web hops between the destination
4 cache through the proximal cache to the distal web cache storing
5 the web content data.

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8 10. (Original) The method of claim 8 wherein, the URL identifier is
9 selected from the group consisting of,

10 an exact URL identifier being an exact URL comprising a
11 plurality of URL components,

12 a wildcard URL identifier being a wildcard URL comprising a
13 plurality of URL components a last URL component of which being a
14 wildcard component, and

15 a coded URL identifier being a coded URL comprising a series
16 of hashing codes of a decomposed URL being a decomposition of the
17 URL selected from the group consisting of either an exact URL or a
18 wildcard URL each of which comprising a series of URL components,
19 the series of hashing codes being a sequence of hashing codes of
20 respective URL segments of a respective series of increasingly
21 concatenated URL components of the series of URL components of the
22 URL.

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1 11. (Currently Amended) The method of claim 8 further comprising
2 the steps of:

3 repeating the URL identifier generating step, proximal IPA
4 generating step, distance generating step, the associating step, a
5 plurality of times for generating a plurality of routing ~~item~~
6 information each comprising a URL identifier and a respective
7 distance metric, and

8 incorporating the plurality of routing ~~item~~ information within
9 a protocol data structure within a routing packet prior to the
10 transmitting step, the routing protocol packet comprising the URL
11 and a respective distance metrics and comprising the proximal IPA
12 and the destination IPA.

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1 12. (Currently Amended) A method of broadcasting from a proximal
2 cache at a proximal internet protocol address (IPA) a routing ~~item~~
3 information for indicating a distal web cache storing web content
4 data associated with a uniform resource locator (URL) of a web
5 server permanently storing the web content data, the proximal web
6 cache is a first one of a plurality of cooperative web caches, the
7 distal web caches is a last one of the plurality of cooperative web
8 caches, the method comprising the steps of:

9 storing at the proximal IPA in a routing table a plurality of
10 URL identifiers cross referenced to a respective plurality of
11 distance metrics,

12 ~~URL-identifier~~ generating at the proximal IPA a URL identifier
13 of the plurality of URL identifiers, the URL identifier for
14 indicating the web content data of the URL stored in the distal web
15 cache,

16 ~~proximal-IPA~~ generating at the proximal IPA the proximal IPA
17 for indicating the location of the proximal cache,

18 ~~destination-IPA~~ generating at the proximal IPA a destination
19 IPA for indicating a destination cache,

20 distance generating at the proximal IPA a distance metric by
21 cross referencing the URL identifier to one of the plurality of URL
22 identifiers and to a respective one of the plurality of distance
23 metrics for indicating a web hop distance of any number of the
24 plurality of cooperative web caches through which the web content
25 data would be communicated from the distal web cache to the
26 destination web cache,

27 associating the proximal IPA and the URL and the distance
28 metric as the routing ~~item~~ information, and

1 transmitting the routing ~~item~~ information in a routing packet
2 within a routing protocol from the proximal cache at the proximal
3 IPA to the destination cache at a destination IPA.

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6 13. (Original) The method of claim 12 wherein,

7 the originating URL identifier is selected from the group
8 consisting of,

9 an exact URL identifier being an exact URL comprising a
10 plurality of URL components,

11 a wildcard URL identifier being a wildcard URL comprising a
12 plurality of URL component a last URL component of which being a
13 wildcard component, and

14 a coded URL identifier being a coded URL comprising a series
15 of hashing codes of a decomposed URL being a decomposition of the
16 URL selected from the group consisting of either an exact URL or a
17 wildcard URL each of which comprising a series of URL components,
18 the series of hashing codes being a sequence of hashing codes of
19 respective hashing of URL segments of a respective series of
20 increasingly concatenated URL components or the series of URL
21 components of the URL.

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1 14. (Currently Amended) The method of claim 12 further comprising
2 the steps of:

3 repeating the URL identifier generating step, proximal IPA
4 generating step, distance generating step, the associating step, a
5 plurality of times for generating a plurality of routing ~~item~~
6 information each comprising a URL identifier and a respective
7 distance metric, and

8 incorporating the plurality of routing ~~item~~ information within
9 a protocol data structure within the routing packet prior to the
10 transmitting step, the routing protocol packet comprising the URL
11 and a respective distance metrics and comprising the proximal IPA
12 and the destination IPA.

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14 15. (Original) The method of claim 12 wherein,

15 the storing steps creates a routing table for cross referencing
16 the plurality of URL identifiers to the plurality of distance
17 metrics and to one or more juxtaposed cooperative web caches IPAs
18 of one or more juxtaposed cooperative web caches of the cooperative
19 web caches, the one or more juxtaposed cooperative web caches for
20 routing URL identifiers to distal web caches storing the web
21 content data of the respective plurality of URL identifiers.

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23 16. (Previously Presented) The method of claim 15 wherein,

24 the proximal cache and the one or more juxtaposed cooperative
25 web caches being within a local group of cooperative web caches.

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1 17. (Previously Presented) The method of claim 16 wherein,
2 the proximal cache is within one or more local groups of
3 cooperative web caches.

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5 18. (New) The method of claim 1 wherein
6 the routing information is communicated in a packet comprising a
7 routing item associating the sourcing IPA and the originating URL.

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